

Island Numeracy Assessment
Grade 7+: Linear Relations
Collaborative Task

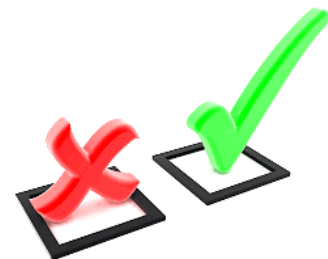
Part A: Sort the twelve equations into three categories: *Always True*, *Sometimes True* and *Never True*. Be sure to discuss your thoughts and reasoning with your group before choosing a category.

$2n + 3 = 3 + 2n$	$n + 5$ is less than 20	$2t - 3 = 3 - 2t$
$5q = 5$	$2x = 2x$	$4p$ is greater than $9 + p$
$2 \times 3 + s = 6 + s$	$k + 12 = g + 12$	$d + 3 = d \div 3$
$2x = 4$	$q + 2 = q + 16$	$n + 5 = 11$

Always True	
Sometimes True	
Never True	

Part B: Choose *one* equation from each category. Write your group's reasoning and provide examples to justify your category choice.

Always True Equation:	Reasoning:
Sometimes True Equation:	Reasoning:
Never True Equation:	Reasoning:



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Item	Assessment Question	Reflections														
1	<p>Ms. Gill's class is making school flags.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Metres of fabric</td> <td style="padding: 5px;">1</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">...</td> <td style="padding: 5px;">?</td> </tr> <tr> <td style="padding: 5px;">Number of flags</td> <td style="padding: 5px;">2 1/2</td> <td style="padding: 5px;">5</td> <td style="padding: 5px;">7 1/2</td> <td style="padding: 5px;">...</td> <td style="padding: 5px;">25</td> </tr> </table> <p>How many metres of fabric will Ms. Gill need to buy to make 25 flags?</p>	Metres of fabric	1	2	3	...	?	Number of flags	2 1/2	5	7 1/2	...	25			
Metres of fabric	1	2	3	...	?											
Number of flags	2 1/2	5	7 1/2	...	25											
2	<p>You earn \$12 per hour at a local restaurant and \$35 in tips for your shift.</p> <p>Write an expression to describe the amount you earned during the shift?</p>															
3	<p>Find the value of $4m + 5k$ if $m = 3$ and $k = (-2)$</p>															
4	<p>If n represents the term number, choose an expression that represents this relationship:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Term Number</td> <td style="padding: 5px;">10</td> <td style="padding: 5px;">11</td> <td style="padding: 5px;">12</td> <td style="padding: 5px;">13</td> <td style="padding: 5px;">14</td> <td style="padding: 5px;">15</td> </tr> <tr> <td style="padding: 5px;">Term</td> <td style="padding: 5px;">24</td> <td style="padding: 5px;">25</td> <td style="padding: 5px;">26</td> <td style="padding: 5px;">27</td> <td style="padding: 5px;">28</td> <td style="padding: 5px;">29</td> </tr> </table> <p>A. $14n$ B. $n + 10n$ C. $n + 14$ D. $n + 24$</p>	Term Number	10	11	12	13	14	15	Term	24	25	26	27	28	29	
Term Number	10	11	12	13	14	15										
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5 Match the following equations with the steps in the model below:

$$\frac{2n}{8} = \frac{8}{2}$$

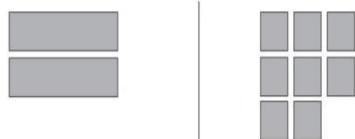
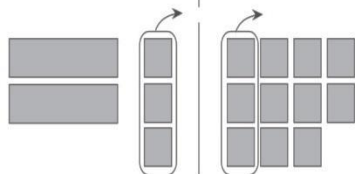
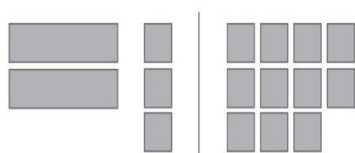
$$2 = 82$$

$$n = 4$$

$$2n + 3 - 3 = 11 - 3$$

$$2n = 8$$

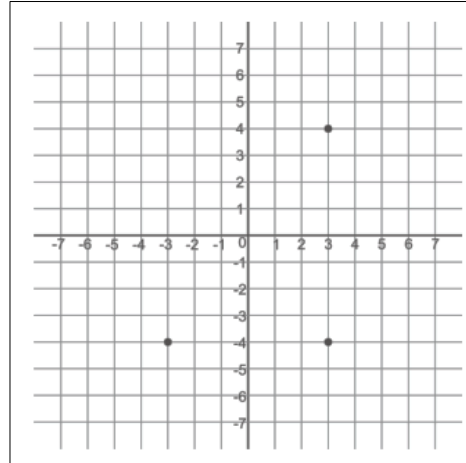
$$2n + 3 = 11$$



6

Write the coordinates of the point that completes the rectangle.

(____, ____)



7

Write an expression for the following:

“Fifteen less than a number, multiplied by 3”

8

The school’s environmental club is holding a lunch. The club is charged \$140 for the speaker, plus \$16 for each lunch served.

The expression $16n + 140$ helps to determine the cost of the lunch.

Using this expression, complete the table of values.

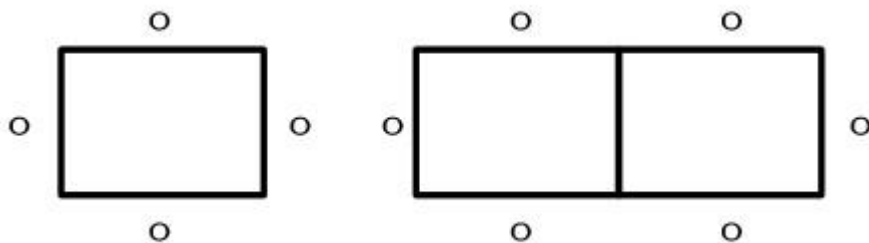
Number of Participants	Total Cost
1	
10	
25	
50	
100	

9 Solve the following equation and show the steps to your solution:

$$3n - 104 = 226$$

10

In the school cafeteria, four people can sit together at one table.



If two tables are placed together, then six people can sit together.

How many tables must be placed together to seat 10 people?

Using the pattern, how many tables would be needed for 50 people?

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Performance Task



The community gives grade seven students of money to plant 100 seedlings each year to help reforest their local mountain.

The first year, the seedlings cost \$3.00 each. Their supplies cost \$250.00

The cost of a seedling increases by \$1.00 each year

1. For how many years will they be able to continue this reforestation project?
2. How many seedlings would they plant in the last year to use all their money?